

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P309981

Luminaire Tested: **24FCZ2-35-UNV-L82765-RDP-CP187-W2A-U-4500K**

Issue Date: 3/3/2020

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

**Test Information**

Test Method: LM-79-08  
Report Number: P309981  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-19)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 24FCZ2-35-UNV-L82765-RDP-CP187-W2A-U-4500K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS WITH INSERT, 0.187" POLYCARB SHEET  
Light Source: (168) 4500K TUNABLE CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER  
Luminaire Equipment: 

<u>Sample No.</u>	<u>Condition</u>	<u>Description</u>
AS-5443-1	Good	WHITE TWIN R-EVOLVE FLOOD
AS-5443-2	Good	REFLECTOR
AS-5443-3	Good	DRIVER
AS-5443-4	Good	UPPER MODULE
AS-5443-5	Good	LENS
AS-5443-6	Good	DRIVER 2
AS-5443-7	Good	TRIM RING

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2079.0 lumens  
Efficiency: N/A  
Efficacy: 72.9 lumens/watt  
Spacing Criteria (0/90/45): 1.26 / 1.3 / 1.41  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

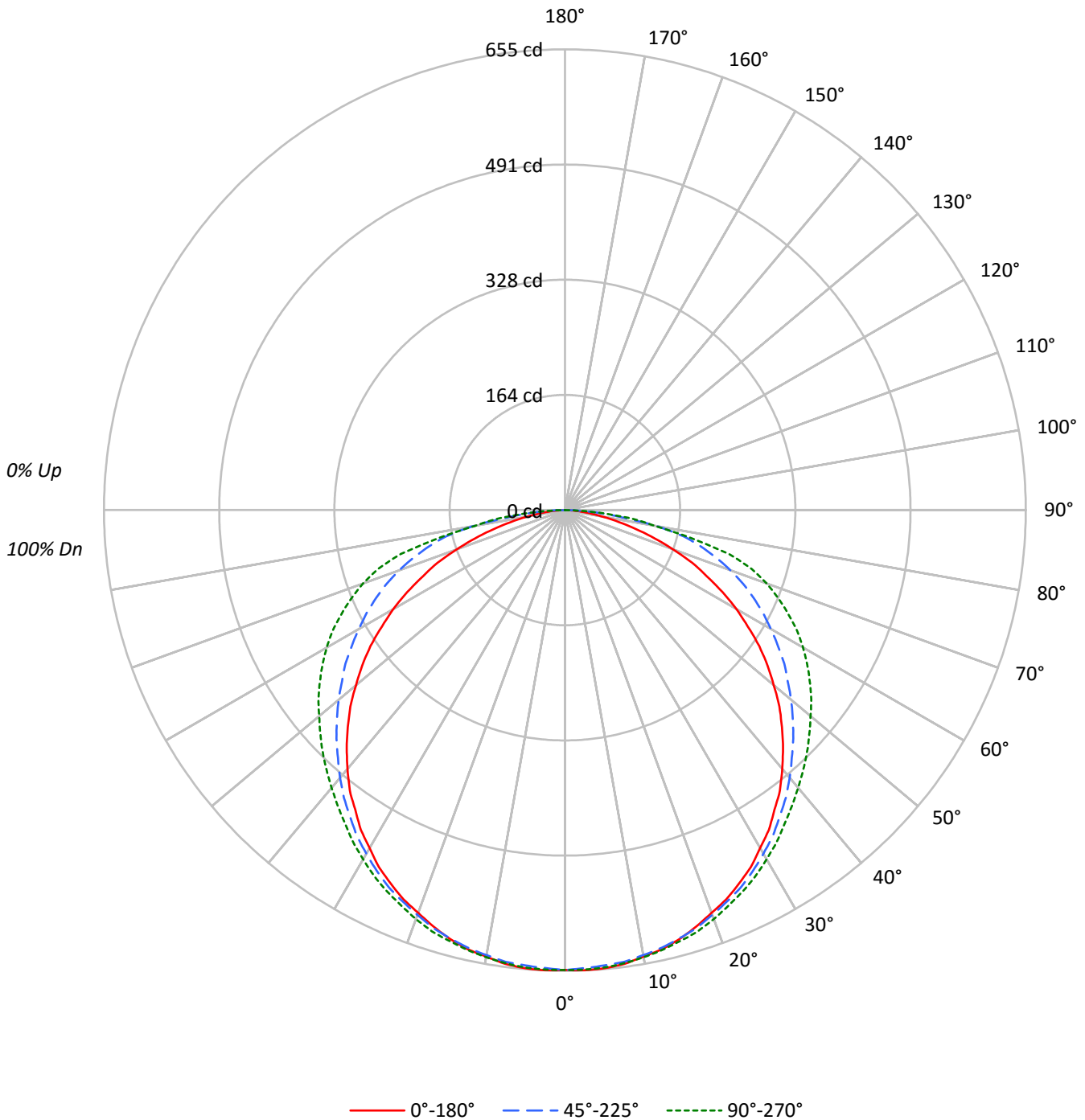
Input Watts (W): 28.5  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR	0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100		
	1	108	103	98	94	105	100	96	92	96	93	89	92	89	87	88	86	84	82	82	82	82	82	82		
	2	97	89	81	75	95	87	80	74	83	77	72	80	75	71	77	73	69	67	67	67	67	67	67		
	3	88	77	68	62	86	76	67	61	72	66	60	70	64	59	67	62	58	56	56	56	56	56	56		
	4	81	68	59	52	78	67	58	51	64	57	51	62	55	50	59	54	49	47	47	47	47	47	47		
	5	74	60	51	44	72	59	51	44	57	49	43	55	48	43	53	47	42	40	40	40	40	40	40		
	6	68	54	45	38	66	53	45	38	51	44	38	50	43	37	48	42	37	35	35	35	35	35	35		
	7	63	49	40	34	61	48	40	34	47	39	33	45	38	33	44	38	33	31	31	31	31	31	31		
	8	59	45	36	30	57	44	36	30	43	35	30	41	34	29	40	34	29	27	27	27	27	27	27		
	9	55	41	33	27	53	40	32	27	39	32	27	38	31	26	37	31	26	24	24	24	24	24	24		
	10	51	38	30	24	50	37	29	24	36	29	24	35	29	24	34	28	24	22	22	22	22	22	22		

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	880	880	880
5°	883	878	882
10°	881	878	882
15°	879	878	883
20°	873	877	886
25°	870	879	888
30°	862	876	891
35°	854	874	894
40°	844	873	906
45°	830	873	926
50°	812	879	954
55°	791	893	997
60°	758	910	1052
65°	709	942	1116
70°	645	986	1201
75°	547	1040	1254
80°	432	1047	1015
85°	318	797	891



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	62.0	3.0
10°-20°	178.5	8.6
20°-30°	272.9	13.1
30°-40°	333.7	16.0
40°-50°	355.6	17.1
50°-60°	340.0	16.4
60°-70°	288.0	13.9
70°-80°	193.6	9.3
80°-90°	54.6	2.6
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	513.4	24.7
0°-40°	847.1	40.7
0°-60°	1542.8	74.2
0°-90°	2079.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2079.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	654	654	654	654	654	
5°	654	653	650	653	653	62
15°	631	631	630	635	634	178
25°	586	588	592	597	598	270
35°	520	524	532	542	544	326
45°	436	443	459	478	487	336
55°	337	350	380	410	425	300
65°	223	245	296	335	351	221
75°	105	143	200	234	241	113
85°	21	42	52	56	58	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	653.8	653.8	653.8	653.8	653.8
2.5°	654.8	654.8	651.7	653.8	653.8
5°	653.8	652.8	649.7	652.8	652.8
7.5°	650.7	649.7	647.6	650.7	649.7
10°	644.5	644.5	642.4	645.5	645.5
12.5°	639.3	638.3	637.3	641.4	640.4
15°	631.1	631.1	630.1	635.2	634.2
17.5°	620.8	621.8	622.8	627.0	628.0
20°	609.4	611.5	612.5	618.7	618.7
22.5°	599.1	600.2	602.2	608.4	608.4
25°	585.7	587.8	591.9	597.1	598.1
27.5°	572.3	573.4	578.5	585.7	586.8
30°	554.8	557.9	564.1	572.3	573.4
32.5°	539.3	542.4	549.6	557.9	559.9
35°	519.7	523.9	532.1	542.4	544.5
37.5°	502.2	505.3	515.6	526.9	530.0
40°	480.5	486.7	497.0	510.4	515.6
42.5°	458.9	465.1	477.4	495.0	501.2
45°	436.2	443.4	458.9	478.5	486.7
47.5°	413.5	421.8	439.3	462.0	471.3
50°	387.7	398.0	419.7	445.5	455.8
52.5°	363.0	375.4	399.1	428.0	441.4
55°	337.2	349.6	380.5	410.4	424.9
57.5°	308.3	324.8	358.9	392.9	408.4
60°	281.5	297.0	338.2	375.4	390.8
62.5°	252.6	273.3	317.6	356.8	372.3
65°	222.7	245.4	296.0	335.1	350.6
67.5°	195.9	220.7	274.3	313.5	329.0
70°	164.0	194.9	250.6	289.8	305.2
72.5°	134.1	168.1	225.8	264.0	278.4
75°	105.2	143.3	200.1	234.1	241.3
77.5°	78.4	118.6	173.2	187.7	182.5
80°	55.7	94.9	135.1	127.9	131.0
82.5°	36.1	72.2	83.5	94.9	98.0
85°	20.6	42.3	51.6	55.7	57.7
87.5°	9.3	15.5	20.6	20.6	19.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)